

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 21, 2005

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor

FROM: Jerriann Ernstsens, Ph.D., Environmental Scientist, Biology.

RE: Replacement of Volume 11, Energy West Mining Inc., PacifiCorp, Deer Creek Mine, C/015/0018, Task ID #2266

SUMMARY:

The Permittee submitted a plan on December 21, 2004 "Deer Creek Mine North Rilda Canyon Portal Facilities". This plan includes disturbing surface areas for a portal, sediment pond, storage areas, approximate 157 stall parking lot, bathhouse, parking garage, and other small facilities. The Permittee has thoughtfully limited the footprint of disturbance by moving the facilities area to avoid stream alterations.

This memo provides evaluations of the third review of the Biology and Land Use sections in the Deer Creek Mine North Rilda Canyon Portal Facilities amendment.

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The Mine and Reclamation Plan (MRP) meets R645-301-121.100 and R645-301-121.200 for the Biology and Land Use chapters because the Permittee presents current, clear, and concise information.

Findings:

Information provided in the plan meets the minimum Permit Application Format and Contents in General Contents requirements of the regulations.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

The MRP meets R645-301-130 because qualified professionals conducted or directed the surveys and analysis for the supporting biological and archeological related documents. The MRP meets R645-300-124.330 because the historic resource documents for the Rilda portal project are in the Confidential File (Division PIC room).

Findings:

Information provided in the plan meets the minimum Reporting of Technical Data in General Contents requirements of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

The MRP meets R645-301-411 regulations pertaining to historic resources. The MRP (Confidential Files) includes evaluations of historic resources that focus on the permit area. It also includes narratives and maps, which describe and show locations within or adjacent to specific projects, of historic resources that may be included in or eligible for inclusion in the National Register. There is proof of coordination efforts and clearances from the SHPO.

There are no cemeteries, parks, trails designated by National Systems of Trails, or rivers designated as Wild and Scenic Rivers.

The MRP includes two historical resource documents that cover the Rilda Canyon area. The Division, in consultation with SHPO, supports a finding of “no effect” to historic resources within or adjacent to the facilities area.

It is important that employees avoid all historic properties during the life of the project. In the event that construction or operations uncover historic properties, Section 106 of the National Historic Preservation Act and 36 CFR 800.13 require that the Permittee stop all work in the vicinity and notify the Division. The Permittee, Division, and other appropriate parties will develop a strategy to avoid the site or mitigate the impacts at that time.

Findings:

Information provided in the plan meets the minimum Environmental - Historic and Archeological Resource Information requirements of the regulations.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

The MRP meets R645-301-321 because there is adequate discussion of plant communities observed within the permit area. Vegetation surveys and maps for the permit area are in different volumes of the MRP. Volume 11, Sec. 300, App. A provides vegetation surveys of the Rilda portal and adjacent areas. Volume 11, Maps 300-1 and 300-2 and Vol. 11, Sec. 300, App. A provide the vegetation and reference area maps for the Rilda portal project.

The MRP describes the permit area as having a diversified topography with conifer, aspen, transitional, and pinyon-juniper ecosystems. The major plant communities within the permit area include white fir/aspen, sagebrush/grass, and pinyon juniper/mountain brush.

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The MRP defines the community types for the Rilda Canyon area as mixed coniferous forests, pinyon-juniper woodlands, mountain brush lands, and riparian areas. The USFS-derived vegetation map (300-1) illustrates these community types with the riparian area as a narrow strip near the facilities area. This map also illustrates aspen forestlands to the west and north of the facilities area. The MRP includes NRCS evaluations for the Rilda facilities and reference areas.

Findings:

Information provided in the plan meets the minimum Environmental - Vegetation Resource Information requirements of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

GENERAL WILDLIFE

The MRP meets R645-301-322 because there is adequate discussion, supporting documentation, and maps on fish and wildlife resource for the permit and adjacent areas.

The Division, in consultation with DWR and USFWS, considers that the Rilda mining operations will likely impact elk habitat. The Permittee provides a list of commitments that may help offset the impact to elk and other wildlife (see discussion in Operations of the TA). In addition, the Permittee will conduct monitoring surveys for aquatics and raptors throughout the life of operations in Mill Fork lease area and Rilda Canyon.

Ungulates

Other large mammals

Bats

Joel and Gabrielle Diamond conducted (October 2004; Vol. 11, Sec. 300, App. G) acoustic, capture, and habitat bat surveys with the focus on the portal facilities project in Rilda Canyon. Their results showed no observations of individual bats, but supported comments from previous surveys that Rilda and Huntington Canyon areas have watering, foraging, and roosting bat habitat. The negative results for individuals were most likely due to the lateness of the season.

The Diamonds warned that further disturbances in the area, including road improvements for the Rilda portal project, could impact these habitats and reduce the possibility of mitigation. The Diamonds recommended maintaining the quality of alternative habitats within the area where displaced bats may relocate.

The 2004 results showed the reclaimed mine adit up slope from the Rilda "powder house" provides a large cavern for bat habitat. The Diamonds described this cavern as the largest in the area and recommend maintaining this site in good condition for bat use.

Bats use echolocating for hunting and each species may echolocate at different frequencies. The MPR provides engineering specs that include frequency ranges for the exhaust and intake fans in Rilda Canyon. Some of the bats that inhabit this area of Utah echolocate within the same frequency range as the fans. The Division, in consultation with DWR, considers that the fans may not have a significant impact to some of the bat species, but may impact noise-sensitive species. These species may relocate to alternative sites.

Macroinvertebrates and fish

The Permittee will use 2004 and 2005 macroinvertebrate surveys for baseline for the Rilda 2005 portal project. The Permittee will also use the same 20 year-old USGS report (USGS Open-File Report 81-539) as supplemental historic information on macroinvertebrate.

The Division, USFS, and DWR support conducting macroinvertebrate surveys during the life of the mine. The Permittee will conduct spring and fall surveys for two consecutive years as the protocol for obtaining aquatic baseline data for the Rilda portal project (Vol. 11, p. 300-11). The Permittee will conduct the spring and fall aquatic post-disturbance surveys the first spring and fall after construction begins for the Rilda facilities site. The Permittee will conduct macroinvertebrate post-disturbance monitoring surveys in the spring every three years following construction. (Vol. 11, Sec. 330, p. 19).

The Division considers that macroinvertebrate monitoring surveys should provide enough information to track changes to Rilda Creek. The Division may require a protection, enhancement, or mitigation plan if the post-disturbance or monitoring surveys indicate negative impacts to the macroinvertebrates or fish adjacent to the Rilda portal project.

DWR will conduct fish surveys in the Huntington drainage as part of their annual monitoring and will most likely include Rilda Creek as part of their wildlife management plan.

All surveyors must use the same protocol and sampling locations provided in the 2004 Walker document. The Permittee must include the baseline and post-disturbance survey

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commitments in section R645-301-322 and incorporate all reports and follow-up analysis into Volume 11 Appendix Volume upon compilation.

The Permittee addresses the Colorado River cutthroat trout and its habitat within or adjacent to the permit area. The 2004 fish surveys reported observations of cutthroat, but DWR considers that the observed fish were most likely Yellowstone cutthroat.

Migratory and Game Birds, and Raptors

The Permittee will conduct yearly raptor fly-over surveys of their permit area. The Permittee will provide the results in their Annual Reports (see Confidential Files).

There is an active raptor nest within the 0.5-buffer zone to one of the topsoil stockpiles for the Rilda portal project (USFS, 2005). The Permittee will adhere to exclusionary periods (Vol. 11, p. 300-10) when birds are tending or nesting at this nest site.

The Permittee provides information concerning migratory and other sensitive bird species within the Rilda portal project area. Table 300-4 (Vol. 11) provides species-specific habitat and specifies whether the habitat is within the Rilda Canyon area.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL/PLANT SPECIES

The MRP meets R645-301-322 because there is adequate discussion, supporting documentation, and maps on TES species that could occur within or adjacent to the permit area. The Division, in consultation with USFWS, support that mining operations will likely have no impact on TES species or their habitat.

The MRP includes current TES lists and an overview of habitat and occurrence data for all the TE species in Emery County, the Manti-Lasal National Forest sensitive species, and other state listed sensitive species (Vol. 11, Sec. 300, App. C, and Tabs. 300-1 through 300-4). Of the TE species listed for the area, the only TE species that may be present is the Mexican spotted owl (although recognized as highly unlikely). The Utah Conservation Data Center (DWR) has no record of occurrence for Federally listed TE species within the Rilda project area.

Plants

The MRP states that no threatened or endangered plant (or animal) species inhabit the Mill Fork or Rilda Canyon areas. There are, however, sensitive species within the permit area. The MRP discusses the potential presence of Monti's milkvetch, Canyon sweetvetch, Peterson catchfly, and Link trail columbine. A query to the Utah Natural Heritage program identified Carrington daisy, USFS sensitive species, occurring in the permit area. The MRP describes the

potential of this species occurring primarily within the southern region of the mine permit area. USFS considers that subsidence will not impact this species. The Utah Natural Heritage program identified the Link Canyon columbine and Canyon sweetvetch, both USFS sensitive species, occurring adjacent to the permit area in Little Bear Canyon.

Mexican Spotted Owl

Mel Coonrod (October 2004) evaluated the Willey 1997 and 2000 models and conducted a ground-truthing survey for the Rilda portal project (Vol. 11, Sec. 300, App. F). The results of the ground-truthing survey supported the Willey models that there is suitable habitat within the canyon. Mr. Coonrod, however, stated that previous calling survey results from other locations within the Manti-Lasal Forest were negative, and considered that the MSO habitat in this area is marginal. He, therefore, concluded that the project does not warrant a MSO calling survey.

Findings:

Information provided in the plan meets the minimum Environmental - Fish and Wildlife Resource Information requirements of the regulations.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Analysis:

The MRP meets R645-301-411.100 because the narrative describes the land uses and capability of the land, and maps illustrate the land uses. Vol. 4, Map 1-2 shows the surface ownership information.

The MRP meets R645-301-411.200 because the narrative describes previous mining operations.

The land uses for the permit area are primarily grazing, wildlife, and recreation. Other uses in the area include gas production. Currently (2005), there is one producing well and plans for future gas development. A pipeline for the gas well follows Forest Road 244 off the permit area. Utah Power and light has a ROW for a 345 KV power transmission line and another line for the Genwall, Crandall Canyon Mine. The Flat Canyon road enters and leaves the southwest portion of the permit area.. Vol. 4, Map 2-18A illustrates land use.

Another land use for the area is a USFS trail near the Rilda portal project. The Permittee will construct a new trailhead and parking pad at the east end of the facilities site. The trail will run east west and extend past the facilities site.

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The USFS classifies sites within the permit area as winter range (critical/high priority) and summer range (high priority) for elk and summer range (high priority) for mule deer, mining and mineral development, and general timber and grazing rangeland (Vol. 11, p. 400-1). Volume 4, Map 2-19 shows mule deer and elk habitat of the permit area. Volume 11, Map 3-1 shows the vegetation communities of the permit and adjacent area. Volume 4, Map 2-16 is a general soils map that also shows the permit and adjacent area.

One of the surface owners of the permit area is the USFS. USFS will evaluate timber values prior to development on their lands. The Permittee will compensate the USFS for the value of timber loss within the permit area..

Findings:

Information provided in the plan meets the minimum Environmental - Land-Use Resource Information requirements of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Archeological Site Maps

The MRP meets R645-301-411.141 because there are archeological maps showing known resource locations within the permit area. These maps are in the Confidential Files (Division PIC).

Vegetation Reference Area Maps

The MRP meets R645-301-323.100 because vegetation maps illustrate community types within disturbed and reference areas, as well as illustrate the location of reference areas. For vegetation maps, refer to the Collins 2003/2004 report (Vol. 11, Sec. 300, App. A), Maps 300-1 and 300-2 (Vol. 11), and Drawing # MFS1821D.

Monitoring and Sampling Location Maps

The MRP meets R645-301-323.200 because the Permittee provides maps showing locations for vegetation analysis, macroinvertebrate and fish monitoring, and prime bat-watering spots (Vol. 11, Sec. 300).

Findings:

Information provided in the plan meets the minimum Environmental - Maps, Plans, and Cross Section Resource Information requirements of the regulations.

OPERATION PLAN

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR 784.17; R645-301-411.

Analysis:

The MRP meets R645-301-411.144 because the Permittee provides past and current historic resource survey reports.

During mining construction, the Permittee will construct a new trailhead and parking pad at the east end of the Rilda facilities site. Reclamation will include removal of this trail and pad as well as restoring the existing road to the original location.

Findings:

Information provided in the plan meets the minimum Operations - Protection of Public Parks and Historic Places requirements of the regulations.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

GENERAL WILDLIFE

The MRP meets R645-301-333, R645-301-342, and R645-301-358 because there is sufficient information for the protection or enhancement plan. The Permittee will protect or enhance the site during operations and reclamation, in part, by the following: (See MRP Sec. 330 for details.)

- Utilize pre-disturbed sites for the Rilda expansion facilities.
- Revegetate previously disturbed areas to standards relative to the nondisturbed reference areas.
- Acquire a right-of-way within the existing Genwal Mine disturbed area for a future breakout.

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- Monitor vegetation using infrared technology.
- Conduct construction outside of wildlife exclusionary periods.
- Reduce speed limit for the Rilda mine access road.
- Monitor macroinvertebrates in Rilda Creek.
- Monitor raptors.
- Protect escarpments on the Joes Valley side from subsidence.
- Install a “stay-out” sign near a large cavern.
- Enhance riparian corridor along the Rilda Creek.
- Install raptor safe electric power lines.
- Install a fence around a rat midden in Rilda Canyon.
- Design the surface drainage so water flows to a ditch north of Rilda Creek.
- Install barriers along the southern edge of the Rilda facilities area.
- Seed topsoil and subsoil piles.
- Comply with other regulating agencies such as Department of Environmental Quality.

Protection and Enhancement Plan

In addition to the protection or enhancement measures that the MRP lists, the Permittee will conduct several mitigation projects for the Rilda portal disturbance. These projects are intended to help offset some of the impacts related to mining operations (see MRP Sec. 330 for details). The mitigation projects include:

- Remove buried coal from predisturbed area.
- Reclaim predisturbed areas that are adjacent to the Rilda disturbed area.
- Cooperate with the DWR in a select timber harvest and aspen regeneration project.
- Provide funding to DWR to develop and analyze raptor data collected over the past twenty-five years.
- Participate with the Division, USFS, UDWR, and private property land owners (CW Mining and PacifiCorp) to rehabilitate Rilda Creek below Rilda Canyon Springs.
- Provide funding to either USFWS or DWR to develop a tracking system of mitigation projects within Huntington Canyon Drainage.

Ungulates and other large mammals

The Permittee will make efforts to protect wildlife, in part, by conducting construction and reclamation outside of elk and deer wintering exclusionary periods (Vol. 11, p. 300-10). For elk and deer, the wintering period is from December 1 through April 15, and calving period is from May 15 through July 5. The Division, in consultation with DWR, considers that the elk will move up the mountain for calving, therefore, the Permittee is not restricted by the calving period for the Rilda portal project at this time. The Division and DWR also consider that the Permittee is not restricted by the fawning period because deer are not as sensitive as elk to human disturbance (phone 5/3/05 hang file yellow notepad).

Bats and other small mammals

There is at least one known rat midden within the permit area. The Permittee will protect this midden with a 6-foot fence around the base.

The Permittee has conducted bat surveys within certain sites of the permit area. A 1997 survey concentrated on Huntington, Straight, and Cottonwood canyons, while a 2004 survey (Diamonds) concentrated on Rilda Canyon. The 2004 survey provided a thorough assessment of bat habitat, but the survey was conducted too late in the season to observe individuals.

The Diamonds (2004) describe the opening for a mine adit as the largest in the area and recommend maintaining this site in good condition for bat use. The Permittee will provide a sign for construction workers to avoid areas beyond markers for the subsoil pile.

Macroinvertebrates and fish

The Permittee will conduct macroinvertebrate-monitoring surveys the first year in the spring and fall following construction and every three years in the spring. The Division may require a protection, enhancement, or mitigation plan if the post-disturbance or monitoring surveys indicate negative impacts to the macroinvertebrates or fish adjacent to the Rilda portal project.

DWR will conduct fish surveys in the Huntington drainage as part of their annual monitoring and will most likely include Rilda Creek as part of their wildlife management plan.

Migratory and Game Birds, and Raptors

The Permittee will conduct yearly fly-over raptor surveys of the permit area.

The Permittee provides information concerning migratory and other sensitive bird species. Table 300-4 lists six species that may inhabit certain areas of the permit area. The Permittee will enhance the riparian corridor along the Rilda Creek, which should improve the habitat for these six species. The MRP includes a protection plan for electrical wire and power pole (Vol. 11, Sec. 300, App. H). It is important to note that West Ridge mine, developed in the Book Cliffs coalfield in 1998, located all power lines underground. The Division suggests the same best technology for the Rilda portal project.

Endangered and Threatened Species

The MRP includes an overview of habitat and occurrence data for all the TE species in Emery County, the Manti-Lasal National Forest sensitive species, and any other state listed sensitive species.

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Mexican Spotted Owl

The Permittee conducted a MSO ground-truthing survey for the Rilda portal project. The Division will not require a calling survey for individuals at this time.

Colorado River Fish

The MRP includes derivations and values of consumption and addition of water to the Colorado River at the time of the Mill Fork lease extension review. The Permittee estimated the total water balance as an annual net gain of 2,453 acre-feet. The Division, in consultation with the USFWS, considered that mining operations were “not likely to adversely affect” the endangered fishes of the Colorado River Basin because there was no indication of depleting water from the Basin.

The Permittee must update all equations and justifications with supporting documentation leading to the overall sum of water depletions or additions when projects would significantly change the current estimated value. The Permittee provided values during the review of the Mill Fork lease. The Permittee does not expect that the Rilda portal project will significantly change the current value.

Bald and Golden Eagles

The Permittee will conduct yearly raptor fly-over surveys of the permit area. These surveys should include monitoring the eagle nest located in cliffs, where escarpment failure could occur. The Division may require a protection, enhancement, or mitigation plan if it is probable that current mining operations will impact individuals or their habitat. PacifiCorp should recognize that it is the Division’s and not their responsibility to consult with DWR and USFWS.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

The Permittee will protect and enhance the riparian area along Rilda Creek. The Permittee will monitor macroinvertebrates, which is an USFS indicator species for changes in water quality. All surface runoff from the Rilda facilities will flow to a ditch north of Rilda Creek. Barriers along the southern edge of the facilities area will provide additional protection to prevent runoff from entering the creek. The Permittee will also participate in an enhancement project of Rilda Creek.

Findings:

Information provided in the plan meets the minimum Operations - Fish and Wildlife

Information requirements of the regulations

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The MRP states that 33.6% of the area for the Rilda portal project was previously disturbed by historic mining operations. The Permittee will revegetate this previously disturbed area to standards relative to the nondisturbed reference areas.

The Permittee will conduct infrared color photography to record vegetation changes every five years. The Permittee will provide the results in Annual Reports at the time of permit reduction and cease analysis once the Division approves a permit area reduction.

Findings:

Information provided in the plan meets the minimum Operations - Vegetation Information requirements of the regulations.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The vegetation- and land use- related information below provides discussion of the reclamation plan and how the plan addresses the regulations.

Findings:

Information provided in the plan meets the minimum Reclamation - General Requirements of the regulations.

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POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The postmine land use is grazing, wildlife, and recreation. During the reclamation phase, the Permittee will remove a planned trail and parking pad near the Rilda portal project as well as restore the existing road to the original location.

Findings:

Information provided in the plan meets the minimum Reclamation - Postmining Land Uses requirements of the regulations.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

Analysis:

To enhance wildlife habitat, the Permittee will form rock piles and plant tublings during the reclamation phase. The Permittee will use a seed mix that provides wildlife with a “natural” and compatible food source once the plants are established.

The Permittee plans to monitor for changes in Rilda Creek during reclamation.

Findings:

Information provided in the plan meets the minimum Reclamation - Protection of Fish, Wildlife, and Related Environmental Values requirements of the regulations.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

The plan for the Rilda Canyon portal project does not include contemporaneous reclamation during the construction and operation phases. The Permittee will conduct interim reclamation for the topsoil stockpiles. The Permittee will also stabilize reclaimed areas by seeding immediately following earthwork.

Findings:

Information provided in the plan meets the minimum Reclamation - Contemporaneous Reclamation requirements of the regulations.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Revegetation: General Requirements

Volume 11 includes the reclamation and revegetation plan for the Rilda portal project. Volume 2, Part 4 includes the reclamation and revegetation plan for the left fork facilities.

Volume 11, Tables 300-8 through 300-10 provide three community-based seed mixes for the interim and final reclamation phases for the Rilda portal project. The seed mixes are for the pinyon/juniper, sagebrush/grass, and white fir/aspen community types. The Permittee will use the same seed mixes for interim and final reclamation. The topsoil piles from the undisturbed and disturbed AML areas will receive the sagebrush/grass seed mix (Vol. 11, p. 300-23) and white fir/aspen (Vol. 1. p. 30-28), respectively. The Permittee will use the pinyon/juniper seed mix for the 0.25 acres of disturbed Douglas fir/white fir community type near the eastern edge of the main facilities site in Rilda Canyon (refer to Collins 2003/2004 vegetation map). The Permittee will also use the pinyon/juniper seed mix for the previously mined and reclaimed AML site.

The Permittee will plant containerized plants of shrub species that are native to the Rilda Canyon area. These transplants will augment seeding in areas commonly difficult for seed to germinate e.g., steep slopes, southern exposures and extremely windy sites. Transplants will contribute to soil stabilization and wildlife habitat enhancement.

Revegetation: Timing

Volume 11, Tab. 300-6 is a general reclamation timetable for the Rilda portal project. According to this timetable, many reclamation activities will occur simultaneously.

Volume 11, Tab. 300-7 is a monitoring program timetable for evaluating site stability, plant health, need for reseeding, and vegetation for bond release. The Permittee will conduct vegetation monitoring during the 4th, 8th, 9th, and 10th years following reclamation.

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Revegetation: Mulching and Other Soil Stabilizing Practices

The Permittee will conduct earthwork immediately followed by seedbed preparation and seeding. Seedbed preparation will include:

- Amending the soil with 2000lbs./acre of certified noxious weed free alfalfa hay.
- Pocking to provide water-catching sites and incorporate the hay.
- Hurricane or hydroseeding with native seed mixes.
- Hydromulching with 1500 lbs./acre of wood fiber or other acceptable product.
- Applying a tackifier to slopes greater than 2:1 at the manufacturers recommended rate.
- Planting tublings at a rate of 200/acre.
- Placing signs around the site to limit access and ensure slope protection.

The Permittee may consider using the track hoe to cast some dead trees and large rocks back onto the reclaimed surface. This debris would provide solar protection and increases available moisture in small areas as well as increases topographic and vegetation diversity.

Revegetation: Standards For Success

The Permittee must use the Division's approved sampling techniques listed in the Division's "Vegetation Guidelines, Appendix A". Qualitative surveys will include sampling reclaimed sites for cover, woody species density, diversity, and productivity.

The Division will assess success of the revegetated sites to the designated reference areas. Success measurements include evaluating the effectiveness and permanence of the vegetation for the approved postmine land use as well as the extent of cover compared to the reference area. The Permittee will meet success standards when ground cover and production rates are not less than 90% of the standard at the 90% confidence level.

Two of the postmine land uses for the permit area are wildlife and recreation. Success standards for wildlife require that tree and shrub stocking rates, planting arrangement, and value are appropriate for the postmine land use. The Permittee will meet success standards when:

- Density attains at least set rates.
- Trees and shrubs are healthy.
- 80% of trees and shrubs are in place at least 60% of the extended responsibility period.

The Permittee will use reference areas as the measure of success for the previously mined AML reclaimed site in Rilda Canyon. This action is above the requirement for predisturbed sites. The Collins 2003/2004 surveys provide data for cover, cover by species, and woody plant density for the pinyon/juniper reference (Collins 2003, Tab. 3) and AML reclaimed areas (Collins 2003, Tab. 2). The total cover for the reference area is 52%. The composition for this site is marginal with 13% alfalfa and 2.3% shrubs. Comparatively, the total cover for the AML

reclaimed area is 42%, but the composition is more dispersed among the life forms and species. The NRCS 2004 evaluation provides the required productivity value and range condition for this site. The NRCS evaluated this site within the required range of fair to better condition. The surveyors conducted the vegetation survey and evaluation within a normal precipitation year.

There is no plan to irrigate following reclamation.

The Permittee will implement a weed or rodent control program, only if needed. The Permittee will seek approval prior to implementing an animal control program.

The Permittee plans to follow regulations associated with repair of rills and gullies.

Findings:

Information provided in the plan meets the minimum Reclamation – Revegetation requirements of the regulations.

RECOMMENDATION

Approve the amendment for Rilda portal project.